| **PROFESSOR:** |  |
| --- | --- |
| **OFFICE LOCATION:** |  |
| **OFFICE HOURS:** |  |
| **PHONE NUMBER:** |  |
| **E-MAIL:** |  |
| **SEMESTER:** |  |
| **DELIVERY METHOD:** |  |

# COURSE NUMBER AND TITLE, CATALOG DESCRIPTION, CREDITS:

## PHY 2053 College Physics I (4 Credits)

This physics course, based on algebra and trigonometry, is the first part of a sequence of two courses. The sequence covers the underlying principles and laws of classical mechanics, oscillations, waves, fluids, sound, thermodynamics, electromagnetism, elements of optics, and modern physics.

## PREREQUISITES FOR THIS COURSE:

(SB 1720 Testing Exemption or successful completion of Developmental courses in reading and writing); and {a grade of “C” or better in (MAC 1140 and MAC 1114) or MAC 1147}

### CO-REQUISITES FOR THIS COURSE:

PHY 2053L

## GENERAL COURSE INFORMATION:

Topic Outline

Systems of measurement, and dimensional analysis

Motion in one, two, and three dimensions

Newton’s Laws and their applications

Work, energy, and conservation of energy

Systems of particles, collisions, center of mass, and conservation of linear momentum

Rotational motion and centripetal acceleration

Conservation of angular momentum

Gravity

Static and rotational equilibrium, and elasticity

Fluids, Archimedes’ principle, and Bernoulli’s equation

Oscillations and waves

## ALL COURSES AT FLORIDA SOUTHWESTERN STATE COLLEGE CONTRIBUTE TO THE GENERAL EDUCATION PROGRAM BY MEETING ONE OR MORE OF THE FOLLOWING GENERAL EDUCATION COMPETENCIES:

**C**ommunicate clearly in a variety of modes and media.

**R**esearch and examine academic and non-academic information, resources, and evidence.

**E**valuate and utilize mathematical principles, technology, scientific and quantitative data.

**A**nalyze and create individual and collaborative works of art, literature, and performance.

**T**hink critically about questions to yield meaning and value.

**I**nvestigate and engage in the transdisciplinary applications of research, learning, and knowledge.

**V**isualize and engage the world from different historical, social, religious, and cultural approaches.

**E**ngage meanings of active citizenship in one’s community, nation, and the world.

A. General Education Competencies and Course Outcomes

1. Listed here are the course outcomes/objectives assessed in this course which play an integral part in contributing to the student’s general education along with the general education competency it supports.

General Education Competency: Evaluate

Course Outcomes or Objectives Supporting the General Education Competency Selected:

Examine the principle of dimensional analysis and use it to derive approximate expressions of physical laws.

Identify the SI system on units and analyze the differences between base and derived units.

Interpret the laws of motion and apply them to solve problems in one and two dimensions.

Differentiate between and among the concepts of work, power, energy, and conservation of energy; examine the applications of these concepts, and use them to interpret and explain natural phenomena.

Use the concept of center of mass and use it to analyze the motion of a system of particles.

Describe the law of conservation of momentum, examine its applications, and use it to interpret and explain natural phenomena.

Apply the concepts of momentum and energy and explain collisions.

Describe the concept of circular motion and use it to solve problems.

Use the Laws of rotational kinematics to compare linear motion with rotational motion.

Explain the law of gravitation as it relates to natural phenomena; combine this law with the laws of motion to explain planetary orbits.

Analyze the conditions for static and rotational equilibrium and use the concept of torque to explain natural phenomena.

Describe the concepts related to fluid pressure and buoyancy and use Bernoulli’s equation to explain natural phenomena.

Explain the properties of oscillations, waves and the Doppler effect; apply these concepts to natural phenomena.B. In accordance with Florida Statute 1007.25 concerning the state’s general education core course requirements, this course meets the general education competencies for science.

1. Students will demonstrate the ability to critically examine and evaluate scientific observation, hypothesis, or model construction, and to use the scientific method to explain the natural world.

2. Students will successfully recognize and comprehend fundamental concepts, principles and processes about the natural world

## DISTRICT-WIDE POLICIES:

### PROGRAMS FOR STUDENTS WITH DISABILITIES

Florida SouthWestern State College, in accordance with the Americans with Disabilities Act and the College’s guiding principles, offers students with documented disabilities programs to equalize access to the educational process. Students needing to request an accommodation in this class due to a disability, or who suspect that their academic performance is affected by a disability should contact the Office of Adaptive Services at the nearest campus. The office locations and telephone numbers for the Office of Adaptive Services at each campus can be found at <https://www.fsw.edu/adaptiveservices>.

### REPORTING TITLE IX VIOLATIONS

Florida SouthWestern State College, in accordance with Title IX and the Violence Against Women Act, has established a set of procedures for reporting and investigating Title IX violations including sexual misconduct. Students who need to report an incident or need to receive support regarding an incident should contact the Equity Officer at [equity@fsw.edu](mailto:equity@fsw.edu). Incoming students are encouraged to participate in the Sexual Violence Prevention training offered online. Additional information and resources can be found on the College’s website at <https://www.fsw.edu/sexualassault>.

## REQUIREMENTS FOR THE STUDENTS:

List specific course assessments such as class participation, tests, homework assignments, make-up procedures, etc.

## ATTENDANCE POLICY:

The professor’s specific policy concerning absence. (The College policy on attendance is in the Catalog and defers to the professor.)

## GRADING POLICY:

Include numerical ranges for letter grades; the following is a range commonly used by many faculty:

| **Grade Percent** | **Letter Grade** |
| --- | --- |
| 90 - 100 | A |
| 80 - 89 | B |
| 70 - 79 | C |
| 60 - 69 | D |
| Below 60 | F |

(Note: The “incomplete” grade [“I”] should be given only when unusual circumstances warrant. An “incomplete” is not a substitute for a “D,” “F,” or “W.” Refer to the policy on “incomplete grades.)

## REQUIRED COURSE MATERIALS:

(In correct bibliographic format.)

## RESERVED MATERIALS FOR THE COURSE:

Other special learning resources.

## CLASS SCHEDULE:

This section includes assignments for each class meeting or unit, along with scheduled Library activities and other scheduled support, including scheduled tests.

## ANY OTHER INFORMATION OR CLASS PROCEDURES OR POLICIES:

(Which would be useful to the students in the class.)